COTTON GINNING INDUSTRY IN KENYA: THE CASE OF THE COOPERATIVE OWNERSHIP AND MANAGEMENT MODE

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ABSTRACT

This paper examines the developments in the cooperative owned ginneries in Kenya from the mid 1970's, when the transition to the cooperative ownership mode took place, up to the present day. In particular the study is concerned with surveying the impact of the cooperative ownership and management structures for the industrial performance in the cotton ginning sector in Kenya. It will be shown that many of the problems the cooperative ginneries have been facing, can be directly connected to the cooperative ownership and management mode, and can be analyzed separately from the general problems of the industry. It is argued that the success or failure in dealing with these cooperative-specific problems will be one of the key factors affecting the success of those policies which aim at reviving the cotton industry in Kenya.

1. Introduction

The purpose of this study is to examine the developments in the cooperative-owned Western Kenyan ginneries from the mid 1970's, when the transition to the cooperative ownership mode took place, up to the present day. In particular the study is concerned with surveying the impact of the cooperative ownership and management structures for the industrial performance in the cotton ginning sector over the period under consideration. The present study is a part of a larger research project, which aims at measuring the impact of the indigenous ownership and management structures for the performance of the industrial companies in Kenya. This work-in-progress-paper will concentrate on presenting the evidence collected during the field research concerning Kenya's cotton production in general and the cooperative ginning activities in particular. To avoid unnecessary prolonging on this paper, the theoretical background discussions on different ownership modes and those concerning the history of Kenya's cooperative movement as well as discussions on the general methodology of this research project will be presented in the forthcoming papers and finally in the thesis itself.

The analysis of this paper is structured in the following way. First, as the background information, the structure and main developments in Kenya's cotton sector are presented. We shall then introduce the cooperative unions operating cotton ginneries in Western Kenya, and estimate the potential viability of the ginning operations in these unions. Then their financial performance will be analyzed. Next, we present the evidence concerning the factors which explain the trends in their financial, management and production performance. Last, based on the evidence of the study, we aim at drawing conclusions of the impact of the cooperative ownership and management mode on the cotton processing activities and on the performance of the cotton industry in Western Kenya.

2. Background: Cotton Industry in Kenya

The cultivation of the cotton plant of Mallow family started as early as 3000 BC in the Indus Valley and in Peru before 2500 BC. The commercial value of the plant comes from its unicellular, flattened and twisted hairs, which provide soft fibre to be used as raw material in the textile industry, and from its seeds, which provide valuable oil for the food and chemical industries. Cotton is not purely a tropical plant;

its cultivation extends from latitude 47 degrees north to 28 degrees south of the equator. As the cotton plant has a tap-root of 2-3 m in length, it needs a deep, well aerated soil, not too rich in mineral salts. During early period of its development it requires sufficient amounts of water, but a definite feature in its cultivation is that it needs after that a longish dry period, as heavy rains are deleterious for mature cotton balls. For this reason cotton competes only marginally with such plants as sugar cane, the present biggest commercial crop in Western Kenya, which needs a more constant supply of rain throughout the cultivation period.

Cotton is one of the important commercial crops in the world with an annual production of approximately 20 million tons. The four biggest producers, Soviet Union, China, USA and India, produce together around half this amount. In Africa, the biggest producers are Egypt (approx. 0.5 million tons per year in the early 1980's) and Sudan (0.15 million tons per year). In Kenya, cotton is not nowadays among the leading cash crops, and the production is small compared to the output of the major world producers. The contribution of cotton production, processing and marketing to Kenya's GNP in the mid of our focal period in 1980 was less than 1 per cent. Gross value of production amounted to approximately Ksh 130.4 million (USD 13.0 million) for seed cotton production and Kshs 62.8 million (USD 6.3 million) for marketing and ginning[1]. Despite cotton's small share in the domestic production, it has been important for the development of Kenya's marginal areas and especially for Western and Nyanza Provinces, where farmers have until recently had few cash crop alternatives. Cotton is exclusively a smallholder crop and an estimated 100.000 families (about 3-4% of rural population) got in the early 1980's their main cash income from its cultivation.

Cotton production in Kenya started around 1903-1907, and the introduction of this crop coincided with two other developments. These are the introduction of the 'hut-tax' for the Africans by the colonial government in 1900, which increased the need to produce cash crops also in the African households, and the opening of the Uganda railway from Mombasa to Kisumu in 1901, which opened Western Kenya for commercial agriculture.[2]

[1] The World Bank (1982): p: 11.

[2] For the early history of cotton production in Western Kenya, see M.J. Hay (1972): Economic Change in Luoland: Kowe 1890-1945, PhD Thesis, University of Wisconsin.

The first area of cultivation was in Western Kenya by Winam Gulf on Lake Victoria, commonly known as the Lake Basin, where much of the area satisfies the soil and weather conditions for cotton production. Most of the high potential cotton land is situated in the present South Nyanza, Kisumu, Siaya, Busia and Bungoma districts, and these districts form the main focal area of this study.

From Western Kenya cotton farming spread in the early 1920's to the Coastal strip bordering the Indian Ocean, and in the 1930's to lowlands of Eastern and Central Provinces. In Rift Valley, cotton growing started in the mid 1970's.

By 1940, cotton was among the three most important African crops in Kenya. However, despite official support, cotton production rarely exceeded 15.000 tons per year due to inability to control pests; climatic and market variability; and farmers' need to ensure a good food crop before devoting time and energy to cotton production.

These conditions remained virtually unchanged during the period immediately after Kenya's independence in 1963. Appendix 1 provides a detailed account of seed cotton[3] production by provinces in Kenya during the years 1965-1988. Cotton production continued at the pre-independence level of 15.000-17.000 tons per year throughout the 1960's and early 1970's. At this stage the Kenya Government policies for the cotton production changed for various reasons. The demand for cotton lint had increased with the growing of Kenya's textile industry, and because of its chronic stagnation, the cotton sub-sector could not supply the adequate raw material from local sources. The country had to rely on supplies of lint from the neighboring Uganda and Tanzania. However, these soft currency imports had become much more problematic by the mid 1970's, as the political tension between Kenya and Tanzania caused the closing of the border in 1976 and the political instability in Uganda made it a very unreliable trade partner. As a result the Kenyan Government launched a programme called the Cotton Development Programme (CDP) in 1975 in order to achieve self-sufficiency in cotton production. The CDP concentrated on increasing incentives for the farmers to cultivate cotton and on removing production constraints. The key elements of this strategy included : (a) raising producer prices by 80% between 1975 and 1979; (b) supplying seeds for planting free of charge; and (c) launching seasonal credit programmes to provide

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3 The crop is called seed cotton before it is ginned to cotton lint and cotton seeds.

farmers with pesticides and tractor ploughing services[4]. Much as a cumulative result of these incentives, the cotton production in Kenya doubled between 1975 and 1979, from 15.000 tons per years to more than 30.000 tons.

From 1980 onwards the trends in cotton production have been less favorable. The production started to fall already in 1980 and this fall culminated in the bad drought year of 1983/4. During the season 1984/85, exceptionally good weather conditions in Eastern and Central Provinces produced the best cotton crop in Kenya's history, but this rise proved to be a short one. Since 1985, the production of seed cotton has declined back to 18.000-19.000 tons per year level, which are similar to the figures of the early 1970's and also to those of most years in the 1930's and 1940's. As new large areas have been simultaneously brought under cotton cultivation in the Hola and Bura irrigation schemes, the present trends have been seen as very unsatisfactory by the Kenyan Government. As the country produces now an average 30.000 bales of cotton lint annually and the annual demand of local textile industry is approximately 50.000 bales[5], Kenya has had to use large amounts of its scarce foreign currency for imports of lint. At the same time the textile industry has continuously complained about the declining quality of lint they are receiving from local ginneries.

For the traditionally leading cotton production area of Western and Nyanza Provinces, where both the buying and ginning operations have been conducted by the cooperatives, the development in the seed cotton supply in the 1980's has been quite unsatisfactory. After the relatively good years of 1975-1981, the trends have been declining. The production has stayed on a very low level even after the weather improved after the drought of 1983/84, and the production level of 3.000.000 kg in 1987/88 is the lowest since the 1920's. The estimates for the season 1988/89 do not promise any improvement. Cotton, once the third most important cash crop in Kenya's Western Province, has declined to its present seventh place amongst the cash crops. What is more alarming is that there has been not

[4] For a detailed account of the CDP, see the World Bank (1982): Cotton Processing and Marketing Project.

[5] The effective demand for lint by Kenya's 12 textile factories using cotton as an input was 3.400 bales of lint per month during the first half of 1988 (EA Report on Trade and Industry, June 1988). On the other hand, the demand for cotton seed by Kenya's 12 cotton seed crushing mills exceeds so much the cotton seed supply of the country that in 1985, the two biggest mills could have crushed the whole crop. It should be, however, noted, that most of these mills have such substitutes as sunflower seed, maize germ and copra, which can partly take the place of cotton seed as raw material. For further comments on cotton seed oil mills, see Dijkstra (1988).

only a shift to the other cash crops, but in some cases land has been left either idle or under poor cultivation in both Western and Nyanza Provinces after the cotton acreage has declined.[6]

What have been the reasons for this weak performance in the seed cotton production in Kenya in the 1980's? In its official view, the Kenya Government lists three main reasons for these developments[7]. First, the problems related to the Cotton Lint and Seed Marketing Board (below the Cotton Board; or the Board; or CLSMB) have caused continuous delays in payments for seed cotton to the farmers. The Board has been functioning practically without any working capital and has financed its payments to farmers with bank overdrafts. As it has paid an average Kshs 23 million annually as interest for these overdrafts, its financial position has been extremely tight for the last 10 years. This has caused delays of over six months in payments to farmers for their crop. There is no doubt that this has been a major disincentive for the cotton production. M. Etyang, in his study of cotton production in Busia district, found a strong association between the length of time farmers waited for their payment and the lack of willingness to cultivate cotton during the next season.[8] During the present study, similar behaviour pattern could be observed.

The second reason given for the decline in the cotton production is the too low producer price for the crop. This is, however, a much more complicated issue than the first one. We have above noted that during the late 1970's, the producer price for cotton was raised considerably. Since 1979, the price to growers has been determined on the export parity basis as shown in Appendix 2. All costs involved from the buying of the seed cotton to the transport of lint to port godowns are deducted from the world market fob Mombasa price to arrive to the amount of producer price. Whether this producer price has been adequate to make cotton competitive compared to alternative crops has been a subject of much debate in Kenya. In the high potential cotton zones of Western Kenya, the other main cash crops are tobacco and vegetable seeds[9]. The most important alternative has been tobacco, which is grown under the umbrella of BAT with a 'high input-high output' approach Appendix 4 shows that in Western Kenya, tobacco, when cultivated in this manner, can produce a gross margin of Ksh 6.000 per half hectare (the other half hectare must be used for the compulsory tree farming), which is the

[6] Evidence of this was given by agricultural officers in both Nyanza and Western Provinces when interviewed during this study.

[7] This issue has been widely covered in 'Report of the Interministerial Committee on the Domestic Textile Industry and Future Role of Cotton Lint and Seed Marketing Board', Republic of Kenya, January 1986.

[8] M. Etyang (1979): pp: 60-101.

[9] Also, to a lesser degree robusta coffee. In the medium potential cotton zones, alternative crops include robusta coffee, sugar cane and citrus fruits, while in the low potential cotton zones the main competing crop has been sugar cane.

maximum area a family farm can put under tobacco and which exhausts most of the labour available for cash crops in these small farms. This Kshs 6.000 should cover for all labour costs and profit for tobacco farming. In Appendix 3, similar figures are provided for cotton. However, when comparing cotton farming with other crops on realistic basis, it is crucial from the point of interest of this study to note that both in the late 1970's and today, the cotton production technologies vary enormously from farm in Western Kenya. In a study of cotton yields in the area, yields per hectare varied from 200 kg to 1500 kg depending on the use of farm inputs, especially on the spraying of the cotton plants against insects and pests.[10] During our research, a demonstration plot with high input utilization produced over 1.000 kg of seed cotton per hectare in Busia district. At the same time the average yield per hectare for the cooperative farmers in the Malaba/ Malakisi zone was as low as 162 kg per hectare, and much lower yields were recorded. For comparisons with the other crops, these yield variations make all the difference as shown in Appendix 3. The cotton margin figure show that a high input approach produces fairly similar gross margins to tobacco, and as tobacco is more labour intensive, high input cotton is a competitive alternative to tobacco production. It is also quite clear that the low input approach to cotton production does not pay well if it pays at all. The problem with Western Kenyan cotton production, and a major reason for the low crop figures, is that only an estimated 10-20% of cotton is sprayed against pests at all, while in the irrigation schemes in Hola and Bura the spraying coverage is almost total. One study estimated that in 1983, only one to two per cent of the small-scale farmers in Busia used anything like a 'high input-high output' approach in their cotton production[11]. Interviews with cotton production experts connected this situation not only to farmers' disillusions of the cotton industry, but also to the 'social problems' of agriculture in Western Kenya, where tradition is weak for intensive use of inputs in farming, and good yields of any crop are in most cases produced only where cultivation is done under very tightly controlled circumstances, such as prevail in the Mumias sugar zone and in BAT-controlled tobacco production[12]. As a conclusion it is reasonable to say at least, that although the producer price for seed cotton is an important incentive for cotton growing, the wide variations in the yields indicate that there is considerable potential for increased cotton production through the introduction of good husbandry techniques.

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[10] A Study of Policies for Development of the Cotton Sub-sector, CLSMB, 1986.

[11] Economic and Financial Feasibility Study of Luanda FCU, 1984, by Deloitte Haskins and Sells.

[12] Interviews with Production Officer, the Cotton Board, and Planning Officer, the Kenya National Federation of Cooperatives.

The third main reason given for the decreased cotton crops especially in Western Kenya has been the poor performance of the cooperative societies and unions, which have acted as agents to the Cotton Board in buying and ginning of cotton as well as in administrating seasonal farm input credit to farmers since the mid 1970's. The performance of these cooperatives and their impact on the cotton industry will be the subject of analysis in the following sections of this study.

After these comments on the cotton cultivation in Kenya, let us now look at how the industry is organized above the farming level. According to law, all cotton bought from Kenya's farmers belongs to the Cotton Board. Seed cotton is bought directly from the farmers by the Board, or it is bought through its agents, i.e. the cooperative societies and the private ginners. The agents,get a buying commission as a compensation for their work; this has been Kshs 0.25 per kg for the last six years. During normal years, cooperative societies are able to buy 95% of Kenya's seed cotton, but because of management problems in the societies, the Board has in various cases in the 1980's interfered, and bought cotton direct from the farmers. At the same time, both the cooperatives and the private buyers have continuously complained that the buying commission is inadequate to cover the buying expenses, and that the Cotton Board has in many cases delayed their payment of the commission.

From the buying stations the seed cotton is transported by private or cooperative lorries and again on commission basis, to the processing factories, the cotton ginneries. As these ginneries are the focal points in our study, we shall now briefly look at what happens in these factories as the seed cotton is processed. In all ginneries in Kenya, the seed cotton is fed manually to the gin stands, or shortly gins. The gins operating in Kenya, with the exception of the Malindi single roller ginnery, are of the double roller type, which draws the lint fibre across fixed knives while the action of moving reciprocating knives severs the fibre from the cotton seed. The separated seeds are collected into bags and used for planting during the next season or transported to oil mills for further processing. The lint drops from the gins on to the floor in front of the gin stands, from where it is collected manually and taken to the baling press. The baling press produces bales of cotton lint weighing 185 kg each. The handling of bales is, without exception, manual in Kenya. The bales are kept in the ginnery stores until they are collected by the Cotton Board and taken to the Board's godowns and finally to the textile mills.

The objectives of the ginner to the cotton industry are of two different natures. The first is to make the best of the seed cotton which the grower presents for processing, as the price paid to the grower for the seed cotton will in the future reflect the prices obtained for the lint. The second objective is, while ginning, to give the cotton the minimum reduction in fibre spinning quality, so that the lint fibre produced will meet the requirements of its ultimate users - the spinner, the textile manufacturer and the consumer. To be able to do this, the managers of the ginnery should apart from adequate skills in general and financial management, also possess sufficient technical knowledge to maintain machinery and equipment, to make adjustments to settings to suit the type and style of cotton, to control rates of throughput for optimum results, to control moisture content in the cotton, and to produce a well-wrapped pressed bale acceptable to the textile mills.

The first ginneries in Kenya were established by Kenyans of Asian origin in the beginning of this century and the Asians remained the sole owners of ginneries until the late 1960's. Under the indigenization policies of the 1970's (see more of this in the following sections), six Asian-owned ginneries were bought by the cooperative unions in the 1970's in Western and Nyanza Provinces. At the same time, the Government by means of CLSMB expanded its own participation in the ginning industry and established six ginneries mainly in Eastern and Central Provinces, one of them in shared ownership with the local cooperative societies which have been dormant for the last six years. Two ginneries at the Coast and one in Kitui district in Eastern Province have remained in private, non-indigenous Kenyan ownership. Appendix 5 gives a record of Kenya's ginneries, their ownership and capacities. Appendix 6 provides an account of the bales of lint ginned in each ginnery between 1974/75 and 1987/88. The production levels reflect of course the figures for the seed cotton production presented in Appendix 1. The ginneries conduct their ginning on commission basis to the Cotton Board. This commission was during the time of our study Kshs 2.00 per kilo of lint ginned. This should cover all expenses in ginning and also the entrepreneur's profit. That the private ginners have remained in the sector for 70 years would indicate that the commission has been adequate to compensate for expenses, if the ginning is done effectively.

The lint and cotton seed produced is the property of the Board. It sells the lint to textile millers and the seed to oil millers in public auctions. The price of lint is determined by a cost-plus system, not through normal auctioning. In addition to the tasks already mentioned in this section, the Cotton Board also has had the responsibility for the general development of the cotton industry in Kenya.

As we have already indicated, the performance of the whole cotton industry in the 1980's has not satisfied the Kenya Government. In addition to the farming problems, the performance of most ginneries has been regarded as inefficient, and the CLSMB has been seen as a weak institution to develop the cotton sector. As a result of the problems facing the industry, the Kenyan Cabinet decided in 1985 to set up an Interministerial Committee to study the situation and make recommendations on the best methods to solve the problems[13]. Based on the recommendations of this Committee and following discussions in the Parliament, a new Cotton Act was passed in July 1988. The new Act, which has not yet been implemented, made the following changes to the organization of the cotton industry, which are of relevance for this study:

1) All the Board-owned ginneries will be sold to the cooperatives and/or the private buyers.
2) The cotton lint will be sold at regular auctions, organized by the Board. The price will be fixed by normal auctioning.
3) Farmers will receive a first payment on delivery of the seed cotton. The final payment will depend on the results of auctioning.
4) The Board will no longer directly be involved in buying, transport or storage activities, which will be a responsibility of the cooperatives or private ginners.

As it is too early to estimate impact of these changes for the cotton production levels in the future, we shall comment on the first point above concerning the ownership of the ginneries, which is much related to the subject of this study. The 1988 Cotton Act has been seen as one of the first moves in the new policies aiming at the restructuring and privatization of Kenya's economy. The Act states that the Board-owned ginneries will be owned either by private ginners, or cooperative unions or societies. In discussions in the Parliament before the Act was passed and in subsequent discussions concerning the implementation of the Act, it

13 The report of the Committee's findings was presented to the Cabinet in January 1986.

has become quite clear that 'private ownership' means in most cases co-operative ownership and the farmers' organizations are the natural and politically the only acceptable owners of these agro-processing facilities[14]. As this discussion of the ownership mode and its implications for the development of the cotton industry coincides with the publishing of the results of the present study, we shall in the last section of this paper make comments concerning the present cotton policies in Kenya and evaluate their realism against the evidence of our research.

After this introduction to the cotton industry in Kenya we are now ready to start our analysis of the impact of the cooperative ownership and management mode for the performance of the ginneries and for the general development of the cotton sector in the country.

3. Performance of Cooperative Ginneries in Kenya

A Introduction

In this section we analyze how those cooperative unions, which own cotton ginneries in Western Kenya, have performed since they took over these factories from their previous Kenyan-Asian owners in the 1970's. The data presented here covers all the cooperative ginneries except the one owned by Malaba/Malakisi Farmers Cooperative Union Ltd. The Malakisi case differs from the others, as together with the ginnery, the union bought also a soap plant and an oil mill. As the Malakisi case will be a subject of another paper related to this research project, it suffices to say here that the performance of the cooperative Malakisi industries has in most aspects been similar to the performance of the five ginneries which are discussed in this paper. Some comments concerning the Malakisi case are, however, added to the present paper, as they have been considered to have explanatory value for the present case.

Table 1 below gives the basic facts of the five cooperative unions in Kenya which operate cotton ginneries. All these ginneries are from the 1920's and 1930's, and they were purchased from Asian family firms in the mid 1970's by the cooperative unions[15]. These take-overs were part

[14] These views favouring cooperatives were reiterated by the interviewed politicians, CLSMB officers and civil servants during this research in 1989. It was regarded as very unlikely that politically acceptable private buyers will emerge.

[15] The Nambale ginnery was first purchased from the Asian owners by CLSMB, which sold it immediately to Nambale FCU Ltd. The last Asian ginnery in Western Kenya, Kibos close to Kisumu town, was purchased by CLSMB, which still operates it as it was considered unviable (it has only six gins) for the cooperative takeover.

of the indigenization drive in the Kenyan agro-industries. It is clear that one of the main reasons for the formation of the cooperative cotton unions in Western Kenya was to speed up the takeovers of the ginneries from their Asian owners. After the first ever meeting of the management committee of the Malaba/Malakisi Union, its Chairman wrote to the Cotton Board that

> I am directed by the Committee of M/M FCU to inform the Board that the said Union wishes to purchase the Malakisi ginnery from the Indian owner who has for 51 years owned it against the wishes of the wananchi who grow cotton in the area. This ginnery came to being in 1922, and the Indian under the umbrella of the Colonial yoke, forcefully exploited wananchi while he enjoyed all the fruits of the wananchi's labour[16].

The unions were strongly supported by the state as the future owners of the ginneries. In case of the Malakisi ginnery, in a letter in January 1973 to the Provincial Commissioner of Western Province, the Cotton Board confirmed the state's support for the cooperative ownership by declaring that

> the Board's policy is that the ginnery in Malakisi should be owned by cooperative societies in Bungoma and Busia districts[17].

This support was reiterated some time later, when the previous owner of the ginnery found a willing buyer for the ginnery in another private Asian businessman. This deal was resisted by the Government, on whose behalf the Provincial Commissioner of the Western Province wrote to the Asian owners informing them that

> (I)t is advised to halt negotiations of the sale of part or whole (of the Malakisi complex) to any other but the body appointed by the Government[18].

With this state support and with loans from the Cooperative Bank of Kenya Ltd, all private ginneries in Western Kenya became co-operative-owned (and the Kibos ginnery CLSMB-owned) before the end of the 1970's.

[16] Letter from the Chairman of M/M FCU to the General Manager of CLSMB, 12.9.1973.

[17] Letter from the Chairman, the Cotton Lint and Seed Marketing Board to the Provincial Commissioner of the Western Province, dated January 1973. The Board also ruled out in this letter any plans of building of a new ginnery in the area for the cooperative union.

[18] Letter from the PC, Western Province, to PDM Ltd, 22.2.1975.

Table 1: Data on Cotton Cooperative Unions in Western Kenya

Union	Founded	No. of societies	Membership No. of farmers	Average cotton produced 74-88 bales
Luanda FCU	1972	6	10.000	3.600
Nambale FCU	1966	9	11.300	2.650
Siaya DCU	1974	14	12.000	2.404
Rachuonyo FCU	1965	11	20.000	2.632
Victoria FCU	1965	19	10.000	2.252

Source: KNFC and CLSMB reports.

The main economic activity of the above cooperative unions during the period 1976-1984 was the ginning of seed cotton in their own ginnery and the related seed cotton buying activity. Additional activities undertaken by these unions are similar in all of them: they operated seasonal credit schemes with funds loaned from the Cooperative Bank; they ran farm input stores; and operated lorries to transport the seed cotton and the farm inputs. It is fair to say that their existence as economic units depended entirely on their performance as parts of the cotton industry.

B Viability of cooperative ginneries

The starting point in this analysis is the assessment of the viability of ginning in these five cooperative ginneries in Western Kenya. We are using the data of cost and revenue structures of these ginneries which is principally drawn from the income and expenditure records at the unions and from reports by the MOCD, CBK, the Cotton Board and the Cotton Development Project personnel. The interest costs on the ginnery acquisition loans and the depreciations are not included, when the contributions from these factories are ~~[illegible]~~ estimated. The estimated costs and revenues per bale of average AR/BR lint processed are shown in Table 2 below.

It is obvious that much of the information on which the above ginnery contribution projections are based on is of doubtful accuracy, as it is drawn from the books of these unions which we shall below show to be badly kept. However, the above break-even points are so low compared to what has been produced during the years 1974-1988 that it is justifiable to state that under proper managerial and financial control all the above cooperative ginneries would have been potentially viable economic units and capable of generating cash surpluses to support the development of the unions' activities.

TABLE 2. Cost and Revenue Structures of Five Coop. Ginneries

(Shs/Bale)	Luanda	Siaya	Victoria	Rachuonyo	Nambale
Ginning Commission	610.15	540.38	606.34	604.95	602.64
Variable costs:					
- direct labour	83.70	50.00	50.00	60.00	75.00
- materials	53.58	48.16	57.19	57.19	55.00
- spare parts	232.70	200.00	150.00	100.00	150.00
- oils & greases	27.36	27.00	30.00	80.00	65.00
Contribution margin:	212.81	215.22	319.15	307.76	257.64
Ginnery fixed costs p/a, Kshs:	285.000	325.000	235.000	385.000	440.000
Break-even, bales:	1.337	1.505	736	1.251	1.708
Average annual output 1974-1988, bales of lint	3.600	2.406	2.252	2.632	2.650

C Financial performance

Based on the above comments on the potential viability of these ginneries we now look at the accumulated financial results the unions have achieved from the time they took over the ginneries in the mid 1970's, up to the year 1984. As the ginning and related cotton buying activities are the only major operations of these unions, the summarized statements of affairs of the unions reflect accurately their performance as a part of the cotton industry. Table 3 below presents these statements of affairs in these five unions as at the end of the year 1984.

In the Table 3 below, each of the unions is shown to be insolvent. If they would be called upon to settle all outstanding current liabilities, they would be unable to do so without liquidating fixed assets. These fixed assets consist in each union almost solely of their ginnery and the associated land.

Furthermore, the majority of the current assets consist at each union of farm input loans to the member societies, balanced by the short term loans to CBK. As we shall show later in more detail, very little of these funds have ever been recovered by the unions from the farmers or cooperative societies; all are many years overdue; and the prospects for future recovery are extremely doubtful. In addition to these loans, each

Table 3: Summarized Statement of Affairs, Five Cotton Unions

	Luanda (Kshs)	Siaya (Kshs)	Victoria (Kshs)	Rachuonyo (Kshs)	Nambale (Kshs)
Fixed Assets	4.361.895	2.595.631	3.051.300	3.266.255	2.215.870
Investments	170.900	132.825	123.800	152.600	172.800
	4.532.795	2.728.456	3.175.100	3.418.825	2.388.670
Curr. Assets					
Stocks	1.420.678	735.413	440.968	481.539	567.552
Member loans	3.465.892	9.233.570	6.216.716	10.219.427	3.274.674
Debtors	208.348	816.527	2.054.149	927.835	380.462
Other	231.726	49.114	32.520	30.678	11.016
	5.326.644	10.834.624	8.744.353	11.659.509	4.233.704
Total Assets	9.859.439	13.563.080	11.919.453	15.078.334	6.622.374
Current Liab.					
Short loans	2.480.565	9.845.389	8.979.081	12.431.014	4.010.615
Creditors	838.448	477.886	1.631.088	235.675	2.129.423
CLSMB	2.210.536	1.758.094	741.049	3.873.806	4.123.865
Other	636.350	48.478	299.941	72.219	362.754
Total Liab.	6.165.899	12.129.847	11.624.159	16.612.714	10.626.657
Net Assets/ (Liabilities)	3.693.540	1.433.233	295.294	(1.534.380)	4.004.283

Source: Unions' financial records.

union is owing substantial amounts long overdue to the Cotton Board. Although all these unions have been insolvent from the late 1970's, only Victoria Union has reached a stage, where all its movable assets were sold in an auction in 1984, and the ginnery was closed down for a whole season. However, Victoria Union's financial status has not been incomparable with that of the other cooperative cotton unions in Western Kenya. They have all been for years 'technically bankrupt', as the auditors stated of Rachuonyo Union in their statement in 1985 (page 7).

After noting above the dismal financial performance of these unions with cotton ginneries, we shall now look at the causes for these developments first in the fields of general and financial management, and then in the technical running of the ginneries.

D Management performance

As a starting point here we would emphasize that the demands of the ginnery management are not exceptionally heavy. The prices for most inputs and outputs are fixed, and the Cotton Board buys all lint and seed regardless of the ginning quality. Principally the whole question is about supervising that the resources are used efficiently in ginning of seed cotton, and the supporting systems to farmers are properly organized, and adequate records are kept on all levels. Against this background I feel convinced to argue that we have found adequate evidence to demonstrate that all of the above unions have clearly failed in their management effort in the years 1976-1984. I base this argument on five points concerning the management of the unions and on our comments in the next subsection regarding their ginning performance.

First, the whole management attitude and the way the planning and control of operations were organized, seem to have been unsuitable for modern agro-industrial enterprises. In the case of the worst of the unions, Victoria Union, the investigation team of the MOCD reported after the 1984 financial collapse flatly that 'the Union's financial base had been eroded due to mismanagement and misappropriation'. The same problems of organizing the management have been visible in the other unions, too. In case of Luanda Union, the auditors report of 1984 comments that

> (t)here is a distinct lack of clear communication lines and co-ordination between sections... The activities of the Union are managed in day-to-day basis... The freedom of the manager to act in the best interest of the ginnery is at times restricted by the influences of the Management committee[19].

The general findings of my own observations on the management style in these unions can be summarized with a comment on Nambale Union:

> Managerially, the Union is weak. NFCU's financial results show no evidence of effective planning or control. Partly as a result of the Union's chronic cash shortage, and consequent inability to pay its employees regularly, the key managerial positions are either vacant or are filled by low calibre staff[20].

Second, this general managerial weakness has eroded the managerial systems in each of the unions. It was very difficult to get accurate information of their activities, as accounting and recording systems have

[19] DH & SMC 1985 audit report of Luanda Union, pp: 17-18.
[20] DH & SMC 1986 audit report, p: 4.

been poorly organized. In a slightly better managed union, Luanda Union,

> due to weaknesses in management (of the union), the union had failed to keep proper books of accounts and exercise proper financial control and as a result profits are not realized[21].

Amongst the main problems in this union, the following shortcomings could be noticed:

(i) a failure for many years to carry out reconciliations of key accounts;

(ii) inclusion as assets of items which did not belong to the union;

(iii) a general lack of understanding of accounting procedures among clerical staff;

(iv) a lack of unit prices for most stocks; and

(v) accumulated mispostings over many years[22].

This type of major errors and inconsistencies could be found to be repeated in all these five unions. In Siaya, due to lack of adequate documentation, brought about partly by the absence of any organized filing system, it was difficult to follow many major records at all. More specifically, as stated in Siaya Union Audit Report, January 1985 (p.6-7), there are a number of balancing figures in the union's books which render the whole system very uncertain. No accounts were produced by January 1985 for the years 1982-1984. In many accounts, the opening balances at the start of financial years were missing, as they could not have been agreed on. No reconciliations have been carried out in this union for many years. The reasons for this state of affairs can be partly related to the lack of suitable experienced accounting staff, but the fault must have lain also with an apparent absence of laid down procedures for the staff to follow and the failure of the management to insist that certain basic accounting standards should have been maintained. These last points applied to all five unions.

Third, it is obvious that the unions' management has paid very little attention to financial control in each of the unions. In 1983

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21 Auditors' report, November 1984, p: 18.

22 Survey data and Auditors report, May 1984, p: 1.

it was noted concerning these unions that

> some ginning advances issued by CLSMB to the unions are utilized for unions' activities that have no relationship to the ginning activity. No financial control was evident despite the fact that the MOCD has a supervisory role on unions' finances... A sense of financial discipline is lacking for most union management committees[23].

Fourth, and related to all three issues mentioned above, it became obvious during this research that the performance of these unions in administrating the farm input loans schemes has been quite disastrous. It must be mentioned as an excuse for the unions that these schemes were started without proper guidelines and an adequate training component by the Kenya Government and the donor agencies in the mid 1970's. Even against this background the performance of these unions in these schemes has been rather dismal. Table 4 sbelow shows the summary of present outstanding balances of these unions in these loans schemes.

Table 4: Farm input loans schemes in cotton unions, outstanding balances as at 30.4.1989.

Union	Luanda	Siaya	Victoria	Nambale	Rachuonyo
Kshs	3.299.794	11.941.952	11.261.741	4.443.317	14.751.710

Source: The Cooperative Bank of Kenya Ltd, loans records.

The total outstanding for these unions was Kshs 45.698.514, which, because of the interest accrued, is more than was released to the unions. All of it is for many years overdue and considered also by the auditors not to be recoverable. Reasons for this state of affairs became obvious during this study. A field report in the Cooperative Bank states simply that

> Siaya Union lacks all effective management and control in its loans section. Book-keeping is non-existent in farmers' loans[24]

More or less the same could be repeated in case of all the other unions. Recovery procedures have been ineffective and the credit sections poorly managed. However, this is not the whole reason for the non-repayment of these loans. Between 1976-1978 Rachuonyo Union did not remit to

23 Report on Study of Co-operative and Board Owned Ginneries, 1983, p: 34.

24 CBK loans officer's field report, 9.6.1979.

the Cooperative Bank funds it had recovered from the farmers to the value of Kshs 558.288. It used the funds for union's overheads[25]. The same took place in the other unions, too. Siaya Union retained Kshs 519.806,95 between 1976 and 1978, and Victoria union Kshs 960.943,50 during the same period[26]. All this was of course illegal and eroded the Cooperative Bank's confidence in these unions and deteriorated the farmers' chances to improve their cotton yields. The MOCD proved to be too weak to prevent these practices, and its weakness was still more evident concerning our last point in this issue. This is the role the local politicians and also the union officers played in actively discouraging the farmers in the loan repayment. The loans were explained to be 'Government funds' or 'Nairobi money', and that the non-repayment would not be punished. As written in a report in 1980:

> It is an open secret that farmers are encouraged (by politicians and cooperative leaders) not to repay as the loans might be written off. The union has made no effort to recover loans[27].

According to the findings of this study, the treatment of farmers loans schemes in the cotton unions in Western Kenya deteriorated radically the unions' reputation as viable agro-industrial business units. This factor has also clearly reduced the cotton yields and the seed cotton supply from the area since the early 1980's, as the farm input credit schemes have since then been in almost total standstill because of the overdue loans. There may have been short-term gains to individual farmers or unions' officials from these schemes and from the general mismanagement of the unions, but in the long-term the above described processes greatly reduced the chances of these unions to survive as independent agro-industrial business organizationss.

Our fifth comment is more linked to the cooperative ownership mode in general than to the cotton unions in particular. This concerns the accounting, planning and reporting systems of any cooperative union or society in Kenya. These systems were and are designed primarily for the marketing cooperatives to take care of their members' produce selling and farm input buying activities. Through the purchase of the ginneries the cotton unions became, however, agro-industrial concerns, which require management and accounting systems which should do more than this. The cooperative accounting systems serve very poorly such tasks as the provision of financial and non-financial data on factories' performance; the recording of commercial liabilities; the bookkeeping of spare parts and finished and un-finished products; as well as the controlling the unions' operations. AS THE MOCD OFFICERS, were trained only in cooperative accounting, they were poorly equipped to assist the unions in systems development and also showed clear resistance to any changes. This issue is definitely a handicap for any cooperative aiming at industrial operations in Kenya.

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25 CBK field officer's report, 29.8.1978.
26 CBK field officer's report, 15.9.1979 and 8.5.1979.
27 CBK field officer's report, 4.11.1980.

E Ginning performance

Let us now look at the efficiency of ginning in different types of ginneries in Kenya. To express it shortly, the idea of ginning is to get as much lint as possible from seed cotton without destroying or losing the cotton seeds, and to do this as fast as possible and with as low costs as possible. We shall use two different criteria in comparing the technical performances of the ginneries. First, when seed cotton is ginned, the output should be 67% of cotton seed and 33% of lint per each kilo of seed cotton ginned. There will, however, always be losses during the ginning process and the above mentioned percentages are never achieved. The percentage, which is wasted of each kilo of seed cotton ginned, is a good indicator for the efficiency of the ginning process, and efficiency in the waste management is one of the keys for good profits as the ginneries are paid by the kilos of lint ginned. In Table 5 below we show the average percentages of waste in ginning in different types of ginneries in Kenya during the period 1976-1984.

Table 5: Waste management in Kenyan ginneries: Estimates for average percentages of waste in 1976-1984

	Waste %
Cooperative ginneries	1.5 - 1.6%
Board ginneries	1.0 - 1.2%
Private ginneries	0.8 - 0.9%

Source: Compiled from the CLSMB Technical Services Section records[29].

These differences in the waste performances are clear indications of differences in the management efficiencies in these ginneries. As they directly effect the revenue level of these factories, they would in a competitive market give a decisive advantage to the private and Board-owned ginneries. However, in Kenya, another indicator describes differences in performanace even more clearly. This is the number of bales of lint each ginnery can produce from each of its gin stands in a given period of time. This is of course a key indicator for efficiency and profitability, as the faster the ginnery can process the supplied seed cotton from its area, the bigger will be the difference between its commission and its costs. The main element making the difference is the

[28] The data collection and storing systems in the Cotton Lint and Seed Marketing Board rank down to the bottom of those produce boards I have visited in Kenya. The Board has not published annual reports for many years. Concerning the performance of ginneries, I could not trace any publications or even internal reports comparing the different types of ginneries. Infortion in this section is compiled from ginnery [redacted]

wages, as the labour force is employed in all ginneries for the whole ginning season, and dismissed immediately after the ginning is completed. Table 6 below shows the number of bales of lint Kenyan ginneries produced per week and per ginstand during the seasons 1984/85 and 1985/6.

Table 6: Time efficiency in Kenyan Ginneries 1984-1986

	1984/85: Production of bales/week/ginstand	1985/86: Production of bales/week/ginstand
Cooperative Ginneries:		
Malakisi	3.9	3.6
Ndere	6.1	5.7
Luanda	5.8	3.7
Homa Bay	2.9	5.5
Kendu Bay	5.4	7.3
Nambale	4.9	5.2
Aver. Cooperative	4.8	5.2
Board Ginneries:		
Mwea	12.2	4.6
Meru	n/a	4.8
Hola	8.6	n/a
Aver. Board	10.4	4.7
Private ginneries:		
Lamu	12.5	11.4
Malindi	12.4	n/a
Kitui	n/a	6.6
Aver. Private	12.5	9.0

Source: Compiled from weekly and monthly ginning reports, CLSMB files.

Working in two shifts a day, the cooperative ginneries produced an average 5 bales of lint per ginstand per week during this period. The same average for the Board-owned factories was 7.6 bales and for the private operators 10.8 bales. We argue that together with our earlier comments on the financial management, this explains much of the situation where the private and to lesser extent, the Board-owned ginneries have been able to operate profitable in Kenya, and the cooperative ones have produced continuous losses. The reasons behind these differences in efficiency can also be easily detected. The downtime because of maintenance, breakdowns, lack of spares and oils, and sometimes for power failures is much bigger in the cooperative ginneries. This again is related to the way these factories are managed. A technical ginning report on the cooperative ginneries states that 'what has been missing is the general ability to cope with day to day problems, future programming and perhaps leadership. Maintenance on a programme schedule has been sadly lacking, and in many cases there has been no programme at all[29]'. During 1983/84 season, the cooperative ginnery in Ndere lost 22.2% of its ginning time because of lack of spares and oil[30]. For the cooperative Kendu Bay ginnery, a report states simply that 'Ginnery dirty. Four gins not working. Gins that were working, not working very well. Shafts not aligned properly, bearings loose. Loss of lint apparent[31]'. Similar comments could be made on each of the cooperative ginneries in Kenya. On the other hand, all technical reports on the private ginneries and most Board-owned ginneries are generally positive. Concerning the private ginnery in Malindi, which was constructed in 1932, one technical report states flatly: 'A well run factory obviously well cared for[32]'. The local textile millers have also expressed preference for the lint from the private ginneries to the lint from the cooperative-owned ginneries. The Board-owned ginneries have further improved their performance during the past few years as a result of a major rehabilitation programme.

As an overall conclusion it is reasonable to argue that the technical performance and production results have been weaker in the cooperative-owned ginneries than in the Board-owned ginneries, and much weaker than in the private ones. This can only partly be explained by the old machinery in the cooperative ginneries. Much of the poor performance has been related to the inadequate skills and wrong management attitudes in those cooperative management bodies which have had the overall responsibility of the running of these factories.

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29 Internal CLSMB memo, G/11/1/77/HTS, dated July 1984

30 Siaya Ginning Report 3/84.

31 CLSMB technical report, 26.6.1984.

32 CLSMB report, 16.7.1984.

4 Discussion and Conclusions

We shall in this section summarize some of our findings based on the above presented evidence on the performance of the cooperative-owned ginneries. As we have already stated, the industry logic in the cotton industry during our focal period has not been the best possible. The problems with CLSMB and the price structure have been noted. We feel, however, that it is reasonable to argue, that many of the problems the cooperative ginneries have been facing, have been directly related to the cooperative ownership and management mode, and can be analyzed separately from the general problems of the industry.

We shall start our concluding argument regarding the management of the cooperative-owned ginneries with a comment, which is related to the original raison d'etre of these unions. A large number of cotton farmers formed the unions, because they thought that by joining forces their needs in the agricultural services and especially in cotton marketing could be satisfied in a better way. However, when the unions purchased the ginneries in the late 1970's, no serious discussion took place about the role of the industrial activities within these cooperatives. The very general 'satisfying of members' needs' approach seemed to have been applied as the main guiding principle in the operations of the new plants, too. This state of affairs had serious implications for the unions' company culture, which did not adequately emphasize operational efficiency and good financial performance as the key objectives in the operations of the factories. It is argued here that at least indirectly the basic fact that the factories were a part of a rural cooperative organization which was formed to satisfy members' needs, influenced the company culture in such a way that high performance level was not regarded as the top priority in the industrial operations. Evidence of attitudes and working methods, which pointed to this direction, were given above in different connections.

This company culture could have improved, if the owners' representatives in the top management body, the management committee of the union, would have worked towards this target. Their norms and values could have influenced the dominating ideas in the company and encouraged practices which could have led to higher performance levels. Because of the very dispersed ownership structure of the unions, no individual had by virtue of his status as an owner enough power to interfere in the decision making of the management committee. Even in cases of severe mistakes and obvious omissions, the owners of the unions remained passive. Thus when the whole committee was forced out of the office by the MOCD as in Malakisi Union in 1978 because of reasons related to committee members' incompetence and dishonesty and these reasons were informed to the general annual meeting, the owners returned most of the committee members back to the top management in the next elections. The election of the committee members seems to have been depending rather on issues such as the candidates' reputation as farmers or in local politics, than on merits earned in the management of the cooperatives or other companies. To conclude, the dispersed ownership structure and the election practices gave a great deal of power and independence to the management committee of these cooperative unions.

Why was it then that the unions and their ginneries performed so badly under the leadership of these management committees? The first point worth noting is the role of the industrial capabilities. The owners' representatives in company's/union's management normally influence the firm's performance by using such instruments as the defining and redefining the company mission and role; the selection of the top management; the improvement of the company culture; and the establishment of a company control scheme. This should be especially the case in companies such as the cooperative unions, where the day-by-day management of the union should according to the Cooperative Societies Act be in the hands of employed senior staff. To use the above instruments properly, the owners' representatives should have adequate experience of industrial management and of the sector where the production takes place. In the case of the cotton unions, the management committee members, who were mainly farmers or politicians, had very little experience of industrial operations, even if they were to some extent familiar with the cotton sector in general. Judging from our study results, their ability to understand, what was needed in the management of the acquired factories, was limited. Yet the members of the committee did not limit their role to such activities as the strategic decision making, but were shown to have participated actively also in the daily management of the union. It has been shown that this combination of active participation and lack of competence had a serious detrimental impact on financial and operational performance of these unions.

A company/union can function successfully, even if the board of directors/management committee lacks competence, if good employed senior staff can compensate for the deficiencies in the top management level. In the case of these cooperative unions also the employed senior and middle level staff had little experience of the management of industrial activities and of operating the necessary management systems. This situation was a result of such factors as the general small number of experienced persons for this type of jobs in Western Kenya, the management committee's insistence to employ the staff from certain tribal and zonal base, and the low maximum salaries stated by the Ministry of Cooperative Development. The total result of this state of affairs for the unions was that both the management committee members and the senior staff lacked skills, which would have been necessary for successful management of ginneries. If this type of industrial investment had been made by private investors in Kenya, it is plausible to argue that in order to safeguard their investment, the investors would have tried to introduce more industrial competence either to the board of directors or to the employed senior management, than was the case in these cooperative unions. In this respect the chances for sustained good industrial performance might have been better under another ownership mode, where returns to owners from industrial operations would have been more directly linked to industrial competence and high performance level, than was the case under the cooperative ownership structure.

Our next comment concerns the impact of the state participation to the affairs of these cooperative unions. According to Kenya's legislation and especially the Cooperative Societies Act, the Ministry of Cooperative Development has the authority to exercise control over the affairs of the cooperative unions. This control is officially justified both from the monitoring and promotion points of view. Our evidence on the poor technical performance and the relaxed controls in the unions would suggest that in its monitoring and controlling role the MOCD has played a rather weak role in the cooperative cotton unions. The management committees of the unions, especially if they have had political power vested in them, have managed in many critical cases to resist the interference by the MOCD. Whether some other form of state participation, such as a permanent seat in the management committees of the unions, would have produced more efficient control, would be a subject that would need further research.

From the point of view of the promotion of the unions' industrial activities, the role of the MOCD during this research period raises some doubts. The industrial capabilities of the civil servants in this ministry appear to have been rather limited. The accounting systems, which the MOCD staff insisted on implementing, were not suitable for the industrial activities. To conclude, the evidence of this study would suggest that the MOCD's intervention in the cotton unions' industrial affairs has not been very successful from either controlling or promotion points of view[33].

What were then the benefits from the industrial operations of these cooperative unions to the small-scale farmers, who were the owners of the factories through their cooperative societies, and who had partly financed the original purchases of the ginneries with deductions from their crop payments? No financial dividends were issued to the farmers from the struggling unions since the take-over of ginneries, and the profits are seldom distributed in this way in any cooperative in Kenya. Our evidence would suggest that also the level of services to the farmers greatly deteriorated during our focal period, and this situation was partly linked to the way the unions managed their industrial operations. The poor financial control and recording practices led finally to the almost total closedown of seasonal credit schemes, and this contributed to the poor yields in cotton production. By using in various cases farmers' cotton payment funds for the payment of the commercial creditors the unions directly caused hardships for the small-scale farmers in the area. To balance these clear negative effects on their living conditions, the farmers may have felt satisfaction of the knowledge that the processing factories were in their ownership and not controlled by a small number of individuals who would 'enjoy the fruits of the farmers' labour' as was quoted earlier in this paper. Our evidence would indicate that for this

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33 This situation is closely related to the question of 'immature' state and the impact of such state intervention to the economic processes. For further discussion on this subject, see G. White's book on this topic.

balancing satisfaction the farmers had to pay a fairly high price. This subject would lead us to a wider discussion of the realism of different development concepts in the indigenization theories and policies and to the problems of the 'democratic' or 'farmer-based' ownership structures; as well as to the dilemma of the distribution of potential profits in a just way in this type of activities involving a large number of low income farmers and their families. These interesting subjects will be discussed in our forthcoming papers.

We have noted that the 1988 Cotton Act gives a big role to the cooperative unions and societies in the future structure of this industry in Kenya. The evidence of this study would suggest that caution should be exercised as the policies of the new act are implemented in practice. The inherent weaknesses of the cooperative ownership and management modes in industrial activities should be taken into consideration, before making final decisions concerning the policies to revive Kenya's ailing cotton sector.

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APPENDIX 1: SEED COTTON PRODUCTION IN KENYA BY PROVINCE 1965-1988 (TONS)

YEARS	WESTERN PROVINCE	NYANZA	SHARE OF NYANZA+ WESTERN OF TOTAL	COAST	CENTRAL+ EASTERN+ RIFT VALLEY	TOTAL PRODUCTION TONS	BALES OF LINT
1965/66	3.282	2.732	44.4%	3.779	3.562	13.555	23.430
1966/67	5.570	2.732	74.0%	1.866	1.678	13.632	23.915
1967/68	3.480	4.517	63.1%	1.645	2.593	11.441	20.072
1968/69	5.152	1.856	53.4%	1.381	4.839	13.127	23.029
1969/70	4.944	2.719	48.4%	1.907	6.248	15.819	27.752
1970/71	7.707	3.751	66.5%	2.896	2.875	17.230	30.228
1971/72	7.242	3.296	63.7%	4.244	1.758	16.540	29.017
1972/73	5.921	3.317	53.6%	4.763	3.217	17.220	30.210
1973/74	6.926	1.687	53.2%	3.254	4.317	16.183	28.892
1974/75	7.289	2.130	64.7%	3.062	3.789	14.560	25.544
1975/76	8.576	3.649	68.0%	3.907	2.332	17.985	31.553
1976/77	10.534	2.714	66.9%	4.050	6.497	19.806	34.747
1977/78	6.969	6.028	48.7%	3.253	9.834	26.714	46.867
1978/79	8.577	6.978	43.9%	2.929	17.082	35.442	62.179
1979/80	9.413	7.075	56.4%	2.849	9.875	29.213	51.250
1980/81	5.940	7.776	51.2%	4.366	8.710	26.783	46.987
1981/82	5.782	6.373	50.1%	4.890	7.043	24.258	42.557
1982/83	2.661	5.246	33.6%	3.888	11.735	23.501	42.053
1983/84	2.638	2.650	35.5%	4.314	5.270	14.872	26.025
1984/85	3.392	3.717	17.8%	9.124	23.712	39.945	70.421
1985/86	3.468	5.537	32.4%	9.811	8.951	27.767	49.187
1986/87	3.291	2.816	31.8%	8.270	4.808	19.185	33.975
1987/88	1.903	1.219	16.6%	8.907	6.755	18.784	32.896

Source: CLSMB, Marketing Section Records.

APPENDIX 2 PRODUCER PRICE FOR SEED COTTON BASED ON EXPORT PARITY FOR THE 1985/86 PRODUCER PRICE OF KSHS 5,-/KG

World Price[34]	0.74 US $ per Ib		
Transport and trading		0.08	
Cotton Varieties	BPA(irr)	BPA	UKA
Premium over world price	0.09	0.07	0.02
Fob Mombasa Price	0.75	0.73	0.68
	Kshs per kg of AR lint		
Fob Mombasa Price (US$=Kshs 0.15)	24.80	24.14	22.49
Port costs	0.45	0.45	0.45
Transport and Storage of lint ex-godown	0.45	0.45	0.45
Ginning fee	3.25	3.25	3.25
Proceeds from sales of cotton seed[35]	(2.00)	(2.00)	(2.00)
Transport and storage of seed cotton	1.50	1.50	1.50
Buying commission	0.76	0.76	0.76
CLSMB costs			
- Cotton services	0.65	0.65	0.65
- Interest costs	1.00	1.00	1.00
- Other overhead	2.00	2.00	2.00
Export Parity Producer Price (lint)	16.74	16.08	14.43
Export Parity Producer Price Seed Cotton (33% of lint price)	5.52	5.30	4.76
Weighted average (60% UKA, 24% BPA, 16% BPA (irr)		5.00	

Source: 1984/85 Agricultural Price Review - Seed Cotton.

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[34] World market price derived from the Cotton Outlook (October 1984).

[35] These are added, not deducted.

APPENDIX 3: COTTON GROWING MARGINS PER HECTARE: WESTERN AND NYANZA PROVINCES

Based on 1984/85 prices.

TECHNOLOGY LEVEL:

ITEM	PRICE PER UNIT	LOW INPUT QUANTITY (kg)	LOW INPUT VALUE (Kshs)	HIGH INPUT QUANTITY (kg)	HIGH INPUT VALUE (Kshs)
YIELD/OUTPUT		(per hectare)			
Cotton AR kg	5.00	160	800	1350	6750
Cotton BR kg	2.45	40	98	150	368
TOTAL GROSS OUTPUT		200	898	1500	7118
VARIABLE COSTS					
Cotton seed (kgs)	0.00	22.5	0	22.5	0
Cypermethrin Ec. 5% (litres)	216.45	0	0	5 lts	1082
Transport/Mkting	0.10	200	20	1500	150
Cost of hired machinery			375		500
Total variable costs			395		1732
GROSS MARGIN EXL. LABOUR/HA (KSHS)			503		5.385
LABOUR COSTS					
Land preparation			800		800
Planting			100		100
Weeding 3 times			600		600
Spraying 5 times			0		300
Picking @ 50 cts/kg			100		750
Grading @ 50 cts/kg			100		750
Transport to nearest buying center @ 10 cts/kg			20		150
Total Labour Costs			1720		3450
MARGIN AFTER LABOUR COSTS			(1217)		1635

Source: Compiled from CLSMB Production Section's Cotton Production Reports.

APPENDIX 4: COSTS AND YIELDS IN TOBACCO PRODUCTION: WESTERN AND NYANZA PROVINCES

Based on 1984/85 prices

COST OF PRODUCTION PER HALF HECTARE

Variable costs excluding labour	Kshs
Chemicals	400.00
Fertilizer	800.00
Flue pipes	800.00
Other costs	400.00
Total	2.400.00
YIELD PER HALF HECTARE	
AVERAGE 700 KG TOBACCO @ 12.00/KG	8.400.00
MARGIN PER HALF HECTARE EXC. LABOUR	6.000.00

Source: District Crops Officer, Bungoma District and BAT, Malakisi Office.

Note: A) Labour costs in land preparation similar to cotton; other labour costs slightly higher than in case of high input cotton.

B) For each half acre of tobacco, at least similar area must be planted with trees, as the curing of tobacco consumes a large amount of the very scarce firewood.

APPENDIX 5: KENYA COTTON GINNERIES

DATA FOR THE YEAR 1989

PROVINCE/ GINNERY	OWNERSHIP	NO. OF GINS	POSSIBLE OUT-PUT IN BALES
WESTERN			
Homa Bay	Victoria Coop. Union	12	6.000
Kendu Bay	Rachuanyo Coop. Union	12	6.000
Kibos	Cotton Board	6	4.000
Ndere	Siaya Coop. Union	11	6.000
NYANZA			
Luanda	Luanda Coop. Union	16	10.000
Nambale	Nambale Coop. Union	12	6.000
Malakisi	Malaba/Malakisi Coop. Union	10	5.000
RIFT VALLEY			
Salawa	Cotton Board	10	5.000
EASTERN/ CENTRAL			
Mwea	Cotton Board	20	10.000
Makueni	Cotton Board	20	10.000
Kitui	Private : Jiwazi and Zaveri Families	16	8.000
Meru	50% Cotton Board, 50% Coop. Society	30	15.000
COAST			
Hola	Cotton Board	20	10.000
Lamu	Private:Merali-Family	11	3.500
Malindi	Private:Ali-Family	37[36]	10.500
	TOTAL	243	110.000 BALES

Source: CLSMB Technical Services Section Records, and on Ownership: Registrar General's Office.

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[36] Single Roller ginnery, which lowers the capacity.

APPENDIX 6: COTTON LINT PRODUCTION BY GINNERY IN KENYA 1974-1988

BALES OF LINT PER YEAR

GINNERY	1974-1975	1975-1976	1976-1977	1977-1978	1978-1979	1979-1980	1980-1981
1. Meru	-	-	-	685	4617	6292	3782
2. Mwea	4120	1307	4167	6203	8926	3241	2202
3. Makueni	-	-	-	-	4956	3299	5252
4. Kitui	2518	2784	6908	11469	11092	4493	4046
5. Hola	-	-	-	2500	2441	2206	2969
6. Lamu	3995	4525	183	262	398	455	1230
7. Malindi	1376	2329	6922	2935	2299	2337	3445
8. Kibos	-	-	-	1478	1333	2362	3468
9. Ndere	933	2057	1852	2745	3145	3142	4149
10. Homa-Bay	-	-	-	2484	3676	3468	2405
11. Kendu Bay	2804	4344	1735	3868	4498	3441	3620
12. Salawa	-	-	-	-	-	-	-
13. Luanda	3572	6756	3661	3292	4893	4415	5592
14. Nambale	3652	3398	2956	3346	4965	5124	1296
15. Malakisi	5565	4032	4863	5589	5338	6475	3534
TOTAL	28535	31532	34747	46867	62179	51250	46988

GINNERY	1981-1982	1982-1983	1983-1984	1984-1985	1985-1986	1986-1987	1987-1988
.1. Meru	3803	7912	6645	11349	4975	3549	2306
2. Mwea	1854	4041	958	12657	3101	1043	611
3. Makueni	-	5890	3002	10146	3268	2090	1316
4. Kitui	2630	3577	1275	7279	2708	1332	1134
5. Hola	-	2562	3018	5678	3616	6405	4155
6. Lamu	639	313	1062	2615	3616	1961	4400
7. Malindi	7238	3922	3622	8000	10778	6402	10685
8. Kibos	2017	2017	2000	1907	1849	2606	276
9. Ndere	2527	2273	1102	2785	3150	-	-
10. Homa-Bay	4230	809	-	2053	1413	1413	1000
11.q Kendu Bay	2406	2818	1631	968	2836	1010	1050
12. Salawa	-	-	-	40	1539	288	275
13. Luanda	3931	3193	2793	2981	2380	1699	1236
14. Nambale	2696	770	1031	1758	2155	2697	1255
15. Malakisi	3487	706	887	1319	1658	1480	903
TOTAL	33270	40757	29027	70147	49187	33975	30632

Source: CLSMB Technical Services Section Ginning Records.

END.